CS 350 Module Five Milestone Three

**What is the purpose of the timerCallback() function?**

The timerCallback() function is called at each timer interrupt. Its purpose is to update the state machine and control the LED blinking according to the Morse code pattern. It handles the timing and transitions between different states (dot, dash, inter-character gap, and inter-word gap) to create the Morse code message.

**What does period mean in this context?**

In this context, the period refers to the time interval between timer interrupts. It is the duration for which the timer runs before triggering an interrupt and calling the timerCallback() function. The period is set in microseconds (Timer\_PERIOD\_US) and determines how long each state (dot, dash, gap) lasts.

**How does the Timer\_CONTINUOUS\_CALLBACK parameter impact the driver?**

The Timer\_CONTINUOUS\_CALLBACK parameter sets the timer to continuous mode with a callback function. This means that the timer will repeatedly trigger an interrupt at the specified period and call the timerCallback() function each time the interrupt occurs. The timer will continue running indefinitely until explicitly stopped.

**What is gpioButtonFxn0() used for?**

In the context of the provided code, gpioButtonFxn0() is the interrupt callback function for the GPIO button press. When the button connected to CONFIG\_GPIO\_BUTTON\_0 is pressed, this function is called. It is used to set a flag or perform an action, such as toggling the Morse code message after the current message is complete. In the final provided code, this function has been replaced with gpioButtonFxn1() for CONFIG\_GPIO\_BUTTON\_1, due to (apparent) issues with the BUTTON\_0 on my board.

**What is the purpose of GPIO\_CFG\_IN\_INT\_FALLING?**

GPIO\_CFG\_IN\_INT\_FALLING is a configuration parameter used to set up a GPIO pin as an input with an interrupt triggered on the falling edge. The falling edge occurs when the signal transitions from high to low, which corresponds to a button press in this case. This configuration ensures that an interrupt is generated when the button is pressed, allowing the callback function (gpioButtonFxn1()) to be called.